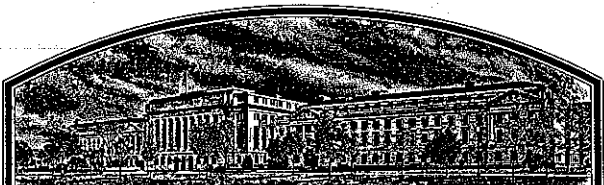


No.

8200094



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Northrup King Co.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S), AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EX- OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1942, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'830'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D.C.
this 23rd day of September in
the year of our Lord one thousand nine
hundred and eighty-two

Attest:

Kenneth F. ...

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY 77W 4430		1b. VARIETY NAME 830		FOR OFFICIAL USE ONLY PV NUMBER 8200094	
2. KIND NAME Common Wheat		3. GENUS AND SPECIES NAME Triticum aestivum L.		FILING DATE 4/5/82	TIME 12:05 X M. P. M.
4. FAMILY NAME (BOTANICAL) Gramineae		5. DATE OF DETERMINATION August 1979		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 4/5/82 7/16/82
6. NAME OF APPLICANT(S) Northrup King Co.		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 1500 Jackson St. N.E. P. O. Box 959 Minneapolis, MN 55440		8. TELEPHONE AREA CODE AND NUMBER 612-781-5305	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Delaware		11. DATE OF INCORPORATION 1896	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Dr. Robert W. Romig (same as above)					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Novelty Statement.
- ☒ 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- ☒ 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) ☐ YES ☒ NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☐ NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☒ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

April 2, 1982
(DATE)

Robert W. Romig
(SIGNATURE OF APPLICANT)

Robert W. Romig

(DATE)

(SIGNATURE OF APPLICANT)

Exhibit A**Origin and Breeding History of 830 Wheat**

Variety "830" is the result of hybridization and individual plant selection from the cross Satanta/Bordenave Puan/Minturki/NB68639. Our pedigree for this variety is N5364-2N-OK. The experimental designation is 77W 4430.

We made the cross in the greenhouse at Eden Prairie, Minnesota in 1972. The cross is a double cross where the female parent was the Satanta/Bordenave Puan F_1 . Satanta, a semidwarf hard red winter wheat released by DeKalb AgResearch, was crossed to an Argentinean wheat, Bordenave Puan. The cross, Minturki/NB68639, was also made in 1971. Minturki was released by Minnesota from the cross, Turkey/Odessa. NB68639 was a Nebraska midtall stem rust resistant selection from the cross NB63285/NB61981. NB63285 was selected from Seu Seu/3/Oro/Mediterranean//Hope/4/Redchief/Pawnee. NB61981 was selected from Cheyenne//Kenya 58/Newthatch/4/2* Cheyenne/3/Tenmarq//Mediterranean/Hope.

F_2 seed was produced in the greenhouse and planted at York, Nebraska in 1973-74. Single plant selections were made in the F_2 at York and F_3 at Pratt, Kansas. In 1976, the F_4 plant progeny row was harvested in bulk to provide seed for preliminary yield trials. Twelve heads from the preliminary trial (F_5) at Pratt were selected to begin our head-row program. F_6 head-rows were grown at Yuma, Arizona in 1977-78. Nine of the twelve F_6 head-rows were harvested and maintained as pure-line increases at Yuma in Kansas and Nebraska. In August 1979 one line, 79AWH 21003, was selected to represent the variety. 830 then is derived from a single F_6 head-row line. Seed from 79AWH21003 was planted at Pratt, Kansas the fall of 1979 to produce 12 acres of breeders seed in 1980.

830 is uniform and stable except for an awnless variant with similar plant characteristics that was rogued from the breeders seed increase in Kansas. The estimated frequency of this variant is less than one plant in 20,000 plants.

Foundation seed produced in 1981 has been inspected and approved by the Kansas Crop Improvement Association.

8200094

Exhibit B

Novelty Statement for 830 Wheat

Variety "830" is most similar to "Scout 66" but differs in plant height. Plant height for "830" averages 93-95 cm, depending upon environment. Plant height for "Scout 66" averages 102-109 cm in the same environments. Variety "830" is thus 9-14 cm shorter than "Scout 66." Slight differences for glume shoulders also distinguish "830" from "Scout 66." "Scout 66" has narrow oblique shoulders whereas "830" has midwide oblique shoulders.

11. HEAD:

☐ 1 Density: 1 = LAX 2 = DENSE

☐ 1 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE
4 = OTHER (Specify) _____

☐ 4 Awedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

☐ 1 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED
5 = BROWN 6 = BLACK 7 = OTHER (Specify) _____

☐ 0 ☐ 7 CM. LENGTH

☐ 0 ☐ 8 MM. WIDTH

12. GLUMES AT MATURITY:

☐ 2 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)
3 = LONG (CA. 9 mm.)

☐ 2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)
3 = WIDE (CA. 4 mm.)

☐ 2 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED
4 = SQUARE 5 = ELEVATED 6 = APICULATE

☐ 3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

☐ 1 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

☐ 1 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

☐ 1 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

☐ 1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

☐ 1 Cheek: 1 = ROUNDED 2 = ANGULAR

☐ 2 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

☐ 1 Brush: 1 = NOT COLLARED 2 = COLLARED

☐ 4 Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN
4 = BROWN 5 = BLACK

☐ 3 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

☐ 0 ☐ 6 MM. LENGTH

☐ 0 ☐ 3 MM. WIDTH

☐ 3 ☐ 2 GM. PER 1000 SEEDS

17. SEED CREASE:

☐ 1 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'
2 = 80% OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

☐ 1 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 35% OR LESS OF KERNEL 'CHRIS'
3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 2 STEM RUST TNM TLM (Races) RKQ RTQ ☐ 1 LEAF RUST (Races) Unknown
☐ 0 POWDERY MILDEW HJC QSH RHR ☐ 0 BUNT

☐ 1 STRIPE RUST (Races) Unknown ☐ 0 LOOSE SMUT

☐ OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 SAWFLY

☐ 0 APHID (Bydv.)

☐ 0 GREEN BUG

☐ 0 CEREAL LEAF BEETLE

☐ OTHER (Specify) _____

 HESSIAN FLY
RACES:

☐ 1 GP

☐ 0 A

☐ 1 B

☐ 0 C

☐ 0 D

☐ 0 E

☐ 0 F

☐ 0 G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Scout 66	Seed size	Scout 66
Leaf size	Scout 66	Seed shape	Scout 66
Leaf color	Scout 66	Coleoptile elongation	Scout 66
Leaf carriage	Scout 66	Seedling pigmentation	Scout 66

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

5

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

Exhibit D

Additional Description of 830 Wheat

Variety "830" is a cultivar of Triticum aestivum L. with winter growth habit. The kernels are hard, red, and ovate in shape. Cheeks are usually rounded. The brush is mid-sized. The spike is awned, lax to middense, and tapered in shape. The glumes are white, glabrous, midlong, and midwide. The shoulder shape is primarily oblique. Beaks are acuminate and 2-7 mm long.

"830" is a tall semidwarf that exceeds "Vona" in plant height by 7-8 cm and is shorter than "Centurk" by 7 cm. Relative maturity is similar to "Newton." Heading dates have averaged about one day earlier than Centurk and two days later than Vona.

Seedling rust reactions of 830 to physiologic races of Puccinia graminis f. sp. tritici were conducted by the Cereal Rust Laboratory in 1982. The following infection types were observed:

<u>Race</u>	<u>Infection Type</u>
TNM	0;
TLM	;1
RKQ	0,1-
RTQ	0;
HJC	2+
QSH	2+
RHR	2+

Field ratings for leaf rust (P. recondita) have been moderately susceptible. Soil-borne mosaic virus field ratings have been moderately resistant to moderately susceptible.

The coleoptile color is white and seedling anthocyanin is absent. Juvenile plant growth is prostrate. Plant color is green. Waxy bloom is present on the stem and flag leaf sheath. Normally three to four nodes originate from the node above ground. The flag leaf is erect in early boot then becomes recurved in late boot and heading. Normally the flag leaf is twisted.

Overall quality for bread has been rated good. Absorption has been equal to Centurk. Mix time and milling extraction have usually been greater than Centurk.

Variety "830" is adapted to the winter wheat growing areas of Texas, New Mexico, Oklahoma, Kansas, Colorado, and Nebraska.

Table 1. Test weight comparison of Variety "830" + Scout 66 in replicated small plot trials at Pratt, Kansas and York, Nebraska during 1978-81.

Location and Year	830 Kg/hl	Scout 66 Kg/hl
<u>Pratt, KS</u>		
1978 Exp. 25	68.0	
1979 Exp. 64	71.4	74.3
1980 Exp. 92	77.4	77.0
Exp. 93	78.6	75.6
Exp. 94	<u>78.0</u>	<u>75.2</u>
Average	78.0	75.9
1981 Exp. 67	78.3	76.1
Exp. 68	<u>66.4</u>	<u>61.8</u>
Average	72.4	69.0
4 Year Average	72.5	73.8
<u>York, NE</u>		
1978 Exp. 25	73.7	
Exp. 21	<u>72.0</u>	
Average	72.9	
1979 Exp. 64	77.6	76.6
1980 Exp. 92	77.4	77.3
Exp. 93	77.4	76.5
Exp. 94	78.3	75.8
Exp. 96	<u>78.3</u>	<u>76.7</u>
Average	77.9	76.6
1981 Exp. 67	77.6	77.2
Exp. 68	<u>77.0</u>	<u>77.4</u>
Average	77.3	77.3
4 Year Average	76.4	75.9

Table 2. Plant heights of variety "830" in comparison with Scout 66 grown in replicated small plot trials at Pratt, Kansas and York, Nebraska during 1978-81.

Location and Year	830 cm	Scout 66 cm
<u>Pratt, KS</u>		
1978 Exp. 25	93	
1979 Exp. 64	108	118
1980 Exp. 92	98	108
Exp. 93	98	111
Exp. 94	92	109
Average	96	109
1981 Exp. 67	77	77
Exp. 68	75	76
Average	76	77
4 Year Average	93	102
<u>York, NE</u>		
1978 Exp. 25	95	
Exp. 21	95	
Average	95	
1979 Exp. 64	97	111
1980 Exp. 92	91	107
Exp. 93	94	105
Exp. 94	99	105
Exp. 96	95	107
Average	95	106
1981 Exp. 67	92	110
Exp. 68	95	107
Average	94	109
4 Year Average	95	109

Table 3. Date of heading of variety "830" in comparison with Scout 66 grown in replicated small plot trials at Pratt, Kansas and York, Nebraska during 1978-81.

Location and Year	Days from January 1	
	830	Scout 66
<u>Pratt, KS</u>		
1978 Exp. 25	138	
1979 Exp. 64	137	137
1980 Exp. 92	139	136
Exp. 93	139	136
Exp. 94	<u>140</u>	<u>136</u>
Average	139	136
3 Year Average	138	137
<u>York, NE</u>		
1978 Exp. 25	152	
Exp. 21	<u>150</u>	
Average	151	
1979 Exp. 64	152	151
1980 Exp. 92	144	142
Exp. 93	144	142
Exp. 94	143	142
Exp. 96	<u>143</u>	<u>142</u>
Average	144	142
1981 Exp. 67	134	134
Exp. 68	<u>132</u>	<u>134</u>
Average	133	134
4 Year Average	145	145

Table 4. Agronomic characteristics of "830" in comparison with Scout 66 summarized from Northrup King trials in 1978-1981.

Characteristic	830	Scout 66
Height cm	94	106
Test Weight kg/hl	74.5	74.9
Heading Date (Days from January 1)	141.5	141.0
Lodging (0-9) <u>1/</u>	1.7	3.7
Winter Survival (0-9) <u>2/</u>	8	8
Shattering (0-9) <u>1/</u>	1	1
Maturity (0-9) <u>3/</u>	5	4
Leaf Rust	10MS	25S
Soil-Borne Mosaic Virus	MR	S

1/ 0-9 Scale where 0 is best and 9 is poorest.

2/ 0-9 Scale where 0 = no survival, 1 = 10-19% survival, 9-90% = 100% survival.

3/ 0-9 Scale where 1 is early maturity, 5 is medium maturity and 9 is very late maturity.

Table 5. Quality characteristics of "830" and checks at Pratt, Kansas in 1978 and 1979.

Characteristics	1978			1979	
	830	Centurk	Scout 66	830	Scout 66
Wheat Protein	12.25	13.21	13.20	12.85	11.65
Test Weight	60.9	58.9	57.8	61.3	61.6
Milling % Ext.	70.2 G-	65.7 F	68.5 G-	70.2 G-	71.2 G
Farinograph					
Absorption	57.2	60.5	60.0	59.0	60.2
Peak	5.25	6.50	5.75	20.0	5.50
Stability	12.5	18.9	14.0	50.0	17.5
MTI	25	24	30	0	25
Valorimeter	63	67	64	100	66
Flour					
Ash	.389	.416	.413	.370	.365
Protein	11.15	11.71	12.00	11.75	10.65
Bake					
Absorption	60.0 F	63.4 G	63.0 G	62.5 G-	62.5 G-
Mix	4.00 G	4.65 G+	3.50 G	8.00 F	4.25 G
Dough	6 G	6 G	6 G	5 G-	4 F
Loaf Vol. cc	945 G	885 G	910 G	960 G	815 F
Score	28 G	29 G	30 G	26 G-	22 F
Overall Score	53 G	56 G	58 G-	55 G-	50 G-

Table 6. Quality characteristics of "830" and checks at Pratt, Kansas in 1980 and 1981.

Characteristics	1980		1981	
	830	Vona	830	Centurk 78 Scout 66
Wheat Protein	13.75	12.85	14.10	13.75
Test Weight	62.0	59.2	61.5	59.6
Milling % Ext.	70.5 G	69.4 G-	67.7 F+	64.6 F-
Farinograph				
Absorption	59.2	57.0	61.3	60.3
Peak	18.00	9.25	25.00	9.25
Stability	46.00	21.50	45.00	38.00
MTI	0	20	5	10
Valorimeter	95	77	100	80
Flour				
Ash	.361	.357	.352	.414
Protein	12.70	11.70	12.85	12.30
Bake				
Absorption	62.0 G-	60.5 F+	63.5 G	63.0 G
Mix	8.00 F	6.50 G-	7.75 F	7.50 F
Dough	4 F	4 F	4 F	4 F
Loaf Vol. cc	810 F	825 F	915 G-	895 G-
Score	20 F	21 F	22 F	24 F+
Overall Score	50 F+	47 F	51 G-	51 G-
				58 G-

Table 7. Quality characteristics of "830" and checks at York, Nebraska in 1979.

Characteristics	830	Centurk	Scout 66
Wheat Protein	13.50	13.75	14.05
Test Weight	62.2	62.7	62.2
Milling % Ext.	71.4 G	69.0 G-	69.0 G-
Farinograph			
Absorption	57.0	60.4	61.0
Peak	14.00	6.25	6.75
Stability	43.00	16.50	15.00
MTI	15	25	25
Valorimeter	91	65	67
Flour			
Ash	.350	.352	.328
Protein	12.15	12.60	12.90
Bake			
Absorption	60.5 F+	63.0 F	63.5 G
Mix	8.00 F	5.00 VG	3.75 G
Dough	5 G-	6 G	6 G
Loaf Vol. cc	910 G	1000 Ex	930 G
Score	25 G-	35 VG-	29 G-
Overall Score	54 G-	64 G	57 G-

Table 8. Quality characteristics of "830" and checks at York, Nebraska in 1980 and 1981.

Characteristics	1980		1981	
	830	Centurk 78	830	Centurk 78 Scout 66
Wheat Protein	13.40	13.65	14.00	13.10 13.45
Test Weight	63.2	62.3	61.9	61.5 61.1
Milling % Ext.	70.3 G-	68.7 G-	68.3 G-	68.6 G- 69.7 G-
Farinograph				
Absorption	58.0	68.0	60.7	59.1 60.6
Peak	7.50	8.00	19.5	11.0 8.00
Stability	26.50	22.00	31.00	35.50 19.00
MTI	20	20	10	10 25
Valorimeter	77	72	96	83 74
Flour				
Ash	.337	.357	.312	.386 .323
Protein	12.25	12.45	12.75	11.80 12.30
Bake				
Absorption	62.0 G-	63.0 G	63.5 G	62.0 G- 63.0 G-
Mix	6.00 G-	5.75 G-	8.75 F	6.50 G- 4.00 G
Dough	4 F	4 F	4 F	4 F 6 G
Loaf Vol. cc	875 F+	875 G-	935 G-	870 F 990 VG-
Score	23 F	22 F	22 F	22 F 32 G
Overall Score	51 G-	50 G-	52 G-	51 G- 62 G